REMARKS

Claims 1-15 and 17-32 are pending in this application. No claims are amended. Claim 16 has been canceled in order to facilitate allowance of this application. Applicants reserve the right to present this claim later and/or in a continuation application.

The specification and drawings were objected to in the Office Action, however these objections are now moot as a result of canceling claim 16.

Applicants respectfully request that a timely Notice of Allowance be issued in this case based on the following remarks.

I. CLAIM REJECTIONS UNDER 35 U.S.C. § 102.

Claims 12, 13, 15, 17-19, and 21-32 are rejected under 35 U.S.C. § 102(b) as being anticipated by Glavish (US 5,483,077), hereinafter referred to as Glavish. Withdrawal of this rejection is respectfully requested for at least the following reasons.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.

Claim 12 recites an angle adjuster controller ... that selects the first offset angle and the second offset angle according to a desired implant angle *and a current target position*, which is not taught by Glavish.

Glavish teaches an ion beam magnetic scanning system using two *time-oscillatory* magnetic deflections of ions produced respectively in a scanner 2 followed by a compensator 4. (Column 11, lines 45-51). Glavish yields an ion beam at a target 16 that is rapidly varying with time so that the size 20 of the cross section of the beam reaching the target is nearly constant irrespective of y position. (Column 12, lines 5-14, and Fig. 2 and Fig. 2a). Thus, Glavish provides an ion beam parallel scanning technique (Fig. 2) that is based upon time or frequency and is not based upon a current target position. In contrast, the angle adjuster controller of claim 12 selects the offset angles using a current target position. Without angular adjustments based upon position on the wafer, the implant angle of the ion beam would vary by offset values at other positions on the wafer (Page 10, lines 11-19, and elsewhere) which is referred to as the cone effect (see also Page 5, line 18 to Page 6, line 13).

Glavish does disclose employing a frequency that accounts for radial correction, by adjusting the waveform according to the diametral size of the wafers. (Column 17, line 62 to Column 18, line 20). Glavish, however, does not employ positional information in order to do so. In contrast, by employing the current target position, the angle adjuster controller can correct angular errors for both fast scan and slow scan directions. (Page 16, line 6 to Page 17, line 15 and elsewhere).

Additionally, the Office Action suggests that a control computer 199 of Glavish is equivalent to the angle adjuster controller of claim 12. The controller computer 199 generates waveforms, amplitudes, and phases for a scanner controller 60 and a

compensator controller 62. (Column 24, lines 59-63). The controller computer 199 employs dose information, but does not employ a current target position of the beam on the wafer, as does the angle adjuster controller of claim 12. Accordingly, for at least the above reasons, Glavish fails to anticipate claim 12.

Claims 13, 15, 17, and 18 depend from claim 12 and, therefore, include the claim limitations of claim 12. As a result, claims 13, 15, 17, and 18 are not anticipated by Glavish.

Claim 19 includes an angle adjuster controller that selects the offset angle according to a desired implant angle and *a current target position*, which is not taught by Glavish.

As stated above, Glavish does not teach an angle adjuster controller that selects an offset angle employing a current target position. Glavish merely provides an ion beam parallel scanning technique that is based upon time or frequency and is not based upon a current target position. (Column 11, line 45 to column 12, line 15 and Fig. 2). Claims 21 and 22 depend from claim 19 and are, as a result, also not anticipated by Glavish.

Claim 23 includes altering a path of the ion beam according to a desired implant angle and *a current target position*, which is not taught by Glavish.

As described above in support of claim 12, Glavish provides an ion beam parallel scanning technique that is based upon time or frequency and does not employ a current target position. (Column 11, line 45 to column 12, line 15 and Fig. 2). Therefore, Glavish does not anticipate claim 23. Claims 24-26 depend from claim 23 and are, as a result, also not anticipated by Glavish.

Claim 27 includes altering a path of the ion beam according to a desired implant angle to compensate for angular errors and a current target position, which is not taught by Glavish.

As described above in support of claim 12, Glavish provides an ion beam parallel scanning technique that is based upon time or frequency and does not employ a current target position. (Column 11, line 45 to column 12, line 15 and Fig. 2). Additionally, Glavish fails to recognize or compensate for angular errors as does claim 27. Therefore,

Therefore, Glavish does not anticipate claim 27. Claims 28-32 depend from claim 27 and are, as a result, not anticipated by Glavish.

II. CLAIM REJECTIONS UNDER 35 U.S.C. § 103.

Claims 1-5 and 7-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Glavish in view of Turner (US 4,745,287) and Viviani (US 6,777,695). Withdrawal of this rejection is respectfully requested for at least the following reasons.

It is noted that the Office Action states that there must inherently be some means for obtaining the current target position because the Glavish system could not function without this information. Applicants respectfully disagree with this statement. Glavish relies on the diametral size of the wafers and placement of the wafers on the carousel for adjustment of the waveforms. (Column 18, lines 16-20).

For a proper 103 rejection, a prima facie case of obviousness, the prior art references must teach or suggest all the claim limitations.

Claim 1 includes an angle adjuster that selectively alters a path of the ion beam according to a *current target position* and a selected implant angle, which is not taught by Glavish, Turner, or Viviani.

Glavish provides an ion beam parallel scanning technique that is based upon time or frequency and does not employ a current target position. (Column 11, line 45 to column 12, line 15 and Fig. 2). Turner and Viviani fail to cure the deficiencies of Glavish and, as a result, a prima facie case of obviousness is not met.

Claims 2-5 and 7-11 depend from claim 1 and, therefore, include the limitations of claim 1. As a result, claims 2-5 and 7-11 are also not taught by Glavis, Turner, and Viviani, alone or in combination.

Claim 2 includes the limitation wherein the current target position is a distance from a center of a current wafer. The cited references do not mention or suggest a distance form a center of a current wafer nor do they employ such information in altering a path of an ion beam. Claim 8 includes an angle element controller that obtains the current target position from the end station. The cited references fail to teach an angle element controller that obtains the current target position and the cited references fail to teach an

teach an end station that provides the current target position.

Accordingly, it is respectfully requested that this rejection be removed for at least the above reasons.

III. CLAIM REJECTIONS UNDER 35 U.S.C. § 102.

Claims 12, 14, 15, and 19-28 are rejected under 35 U.S.C. § 102(b) as being anticipated by Enge (US 4,276,477). Withdrawal of this rejection is respectfully requested for at least the following reasons.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.

Claim 12 recites an angle adjuster controller ... that selects the first offset angle and the second offset angle according to a desired implant angle *and a current target position*, which is not taught by Enge.

Enge teaches passing an ion beam through a magnetic means 32 which is driven by an alternating current power supply 31 to accomplish deflection or switching into symmetric time modulated beam fans 21 and 22. (Column 5, lines 7-22). Enge employs an alternating current power supply 37 for the magnetic means 32 and direct current power supply 35 at successive times for sector magnet pairs 23 and 24. (Column 4, lines 12-18). Enge does not teach employing a current target position to adjust or select offset angles for first and second bending elements. Further, Enge fails to teach a mechanism for adjusting the AC power supply 37 and the direct current power supply 35 during operation. Therefore, Enge fails to anticipate claim 12. Claims 14 and 15 depend from claim 12 and are not anticipated for at least the above reasons.

Claim 19 includes an angle adjuster controller ... that selects the offset angle according to a desired implant angle *and a current target position*, which is not taught by Enge.

The above arguments in support of claim 12 are hereby reiterated. Claims 20-22 depend from claim 19 and are also not anticipated by Enge.

Claim 23 includes altering a path of the ion beam according to a desired implant angle and *a current target position*, which is not taught by Enge.

As stated above, Enge fails to teach altering a path of the ion beam according to a desired implant angle and a current target position. Enge merely teaches passing an ion beam through a magnetic means 32 which is driven by alternating current power supply 31 to accomplish deflection or switching into symmetric time modulated beam fans 21 and 22. (Column 5, lines 7-22). Therefore, Enge fails to anticipate claim 23. Claims 24-26 depend from claim 23 and are not anticipated by Enge for the same reasons.

Claim 27 includes altering a path of the ion beam according to a desired implant angle to compensate for *angular errors* and a *current target position*, which is not taught by Engle.

Enge teaches passing an ion beam through a magnetic means 32 which is driven by alternating current power supply 31 to accomplish deflection or switching into symmetric time modulated beam fans 21 and 22. (Column 5, lines 7-22). Enge fails to teach altering a path of an ion beam to compensate for *angular errors or a current target position*, as in claim 27. As a result, Enge fails to anticipate claim 27. Claim 28 depends from claim 27 and is, therefore, not anticipated by Enge.

IV. CLAIM REJECTIONS UNDER 35 U.S.C. § 103.

Claims 1, 4-7, 9, and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Enge in view of Robertson (US 3,778,626). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 1 includes an angle adjuster that selectively alters a path of the ion beam according to a *current target position* and a selected implant angle, which is not taught by Enge and/or Robertson.

As stated above, Enge fails to teach an angle adjuster that selectively alters the path according to a current target position. Robertson fails to cure that deficiency. Robertson controls regulating uniformity of ion dose in workpieces by regulating the position of the target during each traversal or by regulating the traversing speed according to the ion beam current. (Abstract). The position information employed in Roberts is limited to a radius from an axis 12 of a target 11 that comprises a plurality of

workpieces 10 attached thereto. (Column 2, lines 47-62 and Fig. 1). Accordingly, Enge and Robertson fail to teach the angle adjuster of claim 1. Claims 4-7, 9, and 11 depend from claim 1 and are not taught for at least the above reasons. As a result, it is respectfully requested that this rejection of claims 1, 4-7, 9, and 11 be removed.

V. CONCLUSION

For at least the above reasons, pending claims currently under consideration are believed to be in condition for allowance and notice thereof is requested.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should any fees be due as a result of the filing of this response, the Commissioner is hereby authorized to charge the Deposit Account Number 50-1733, EATNP159US.

Respectfully submitted,
ESCHWEILER & ASSOCIATES, LLC

By _____
Thomas G. Eschweiler
Reg. No. 36,981

National City Bank Building
629 Euclid Avenue, Suite 1210
Cleveland, Ohio 44114
(216) 502-0600

CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Assistant Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: August 16, 2005 _____
Christine Gillroy

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